

0590  
09/9

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RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/09/854,122

DATE: 10/01/2001  
 TIME: 15:09:02

Input Set : A:\Pha00701.app  
 Output Set : N:\CRF3\10012001\I854122.raw

3 <110> APPLICANT: ALBERTE, RANDALL S.  
 4 SMITH, ROBERT  
 6 <120> TITLE OF INVENTION: TRANSGENIC PLANTS INCORPORATING TRAIT OF ZOSTERA MARINA  
 8 <130> FILE REFERENCE: PHA-007.01  
 10 <140> CURRENT APPLICATION NUMBER: 09/854,122  
 C--> 11 <141> CURRENT FILING DATE: 2001-09-10  
 13 <150> PRIOR APPLICATION NUMBER: 60/202,529  
 14 <151> PRIOR FILING DATE: 2000-05-10  
 16 <160> NUMBER OF SEQ ID NOS: 51  
 18 <170> SOFTWARE: PatentIn Ver. 2.1  
 20 <210> SEQ ID NO: 1  
 21 <211> LENGTH: 232  
 22 <212> TYPE: PRT  
 23 <213> ORGANISM: Artificial Sequence  
 25 <220> FEATURE:  
 26 <223> OTHER INFORMATION: Description of Artificial Sequence: Consensus  
 27 sequence  
 29 <220> FEATURE:  
 30 <221> NAME/KEY: MOD\_RES  
 31 <222> LOCATION: (8)  
 32 <223> OTHER INFORMATION: N or T  
 34 <220> FEATURE:  
 35 <221> NAME/KEY: MOD\_RES  
 36 <222> LOCATION: (10)..(219)  
 37 <223> OTHER INFORMATION: Any amino acid; this region may vary in length from  
 38 190-210 amino acids  
 40 <220> FEATURE:  
 41 <221> NAME/KEY: MOD\_RES  
 42 <222> LOCATION: (223)..(224)  
 43 <223> OTHER INFORMATION: Any amino acid  
 45 <220> FEATURE:  
 46 <221> NAME/KEY: MOD\_RES  
 47 <222> LOCATION: (229)..(230)  
 48 <223> OTHER INFORMATION: Any amino acid  
 50 <400> SEQUENCE: 1  
 W--> 51 Thr Tyr Pro Lys Ser Gly Thr Xaa Trp Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 52 1 5 10 15  
 W--> 54 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 55 20 25 30  
 W--> 57 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 58 35 40 45  
 W--> 60 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 61 50 55 60  
 W--> 63 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 64 65 70 75 80  
 W--> 66 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
 67 85 90 95

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```

W--> 69 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      70      100      105      110
W--> 72 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      73      115      120      125
W--> 75 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      76      130      135      140
W--> 78 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      79 145      150      155      160
W--> 81 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      82      165      170      175
W--> 84 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      85      180      185      190
W--> 87 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      88      195      200      205
W--> 90 Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
      91      210      215      220
W--> 93 Gly Asp Trp Lys Xaa Xaa Phe Thr
      94 225      230

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97 <210> SEQ ID NO: 2

98 <211> LENGTH: 4

99 <212> TYPE: PRT

100 <213> ORGANISM: Artificial Sequence

102 <220> FEATURE:

103 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic

104 peptide

106 <400> SEQUENCE: 2

107 Lys Asp Glu Leu

108 1

111 <210> SEQ ID NO: 3

112 <211> LENGTH: 4

113 <212> TYPE: PRT

114 <213> ORGANISM: Artificial Sequence

116 <220> FEATURE:

117 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic

118 peptide

120 <400> SEQUENCE: 3

121 His Asp Glu Leu

122 1

125 <210> SEQ ID NO: 4

126 <211> LENGTH: 10

127 <212> TYPE: PRT

128 <213> ORGANISM: Artificial Sequence

130 <220> FEATURE:

131 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic

132 motif

134 <220> FEATURE:

135 <221> NAME/KEY: MOD\_RES

136 <222> LOCATION: (2)..(4)

137 <223> OTHER INFORMATION: Variable amino acid

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DATE: 10/01/2001

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Input Set : A:\Pha00701.app

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```

139 <220> FEATURE:
140 <221> NAME/KEY: MOD_RES
141 <222> LOCATION: (7)..(9)
142 <223> OTHER INFORMATION: Variable amino acid
144 <400> SEQUENCE: 4
W--> 145 Lys Xaa Xaa Xaa Thr Val Xaa Xaa Xaa Glu
146 1 5 10
149 <210> SEQ ID NO: 5
150 <211> LENGTH: 24
151 <212> TYPE: DNA
152 <213> ORGANISM: Artificial Sequence
154 <220> FEATURE:
155 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
157 <220> FEATURE:
158 <221> NAME/KEY: modified_base
159 <222> LOCATION: (6)
160 <223> OTHER INFORMATION: inosine
162 <220> FEATURE:
163 <221> NAME/KEY: modified_base
164 <222> LOCATION: (15)
165 <223> OTHER INFORMATION: inosine
167 <220> FEATURE:
168 <221> NAME/KEY: modified_base
169 <222> LOCATION: (18)
170 <223> OTHER INFORMATION: inosine
172 <220> FEATURE:
173 <221> NAME/KEY: modified_base
174 <222> LOCATION: (21)
175 <223> OTHER INFORMATION: inosine
177 <400> SEQUENCE: 5
W--> 178 tayccnaara gyggnacnac ntgg 24
181 <210> SEQ ID NO: 6
182 <211> LENGTH: 27
183 <212> TYPE: DNA
184 <213> ORGANISM: Artificial Sequence
186 <220> FEATURE:
187 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer
189 <220> FEATURE:
190 <221> NAME/KEY: modified_base
191 <222> LOCATION: (10)
192 <223> OTHER INFORMATION: inosine
194 <220> FEATURE:
195 <221> NAME/KEY: modified_base
196 <222> LOCATION: (13)..(19)
197 <223> OTHER INFORMATION: inosine
199 <400> SEQUENCE: 6
W--> 200 yttccartcn cchnnnnnnnc cyttyct 27
203 <210> SEQ ID NO: 7
204 <211> LENGTH: 27

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PATENT APPLICATION: US/09/854,122

TIME: 15:09:02

Input Set : A:\Pha00701.app

Output Set: N:\CRF3\10012001\I854122.raw

205 <212> TYPE: DNA  
 206 <213> ORGANISM: Artificial Sequence  
 208 <220> FEATURE:  
 209 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
 211 <220> FEATURE:  
 212 <221> NAME/KEY: modified\_base  
 213 <222> LOCATION: (10)  
 214 <223> OTHER INFORMATION: inosine  
 216 <220> FEATURE:  
 217 <221> NAME/KEY: modified\_base  
 218 <222> LOCATION: (13)..(19)  
 219 <223> OTHER INFORMATION: inosine  
 221 <220> FEATURE:  
 222 <221> NAME/KEY: modified\_base  
 223 <222> LOCATION: (25)  
 224 <223> OTHER INFORMATION: inosine  
 226 <400> SEQUENCE: /7  
 W--> 227 yttccartcn ccnnnnnnnc cyttngc 27  
 230 <210> SEQ ID NO: 8  
 231 <211> LENGTH: 27  
 232 <212> TYPE: DNA  
 233 <213> ORGANISM: Artificial Sequence  
 235 <220> FEATURE:  
 236 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
 238 <400> SEQUENCE: 8  
 239 atctgattaa ccccgacaag ttattgg 27  
 242 <210> SEQ ID NO: 9  
 243 <211> LENGTH: 27  
 244 <212> TYPE: DNA  
 245 <213> ORGANISM: Artificial Sequence  
 247 <220> FEATURE:  
 248 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
 250 <400> SEQUENCE: 9  
 251 ccaataactt gtcgggggtta atcagat 27  
 254 <210> SEQ ID NO: 10  
 255 <211> LENGTH: 35  
 256 <212> TYPE: DNA  
 257 <213> ORGANISM: Artificial Sequence  
 259 <220> FEATURE:  
 260 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
 262 <400> SEQUENCE: 10  
 263 atccgagctc gatggctgga atttttagctt tggag 35  
 266 <210> SEQ ID NO: 11  
 267 <211> LENGTH: 32  
 268 <212> TYPE: DNA  
 269 <213> ORGANISM: Artificial Sequence  
 271 <220> FEATURE:  
 272 <223> OTHER INFORMATION: Description of Artificial Sequence: Primer  
 274 <400> SEQUENCE: 11

## RAW SEQUENCE LISTING

DATE: 10/01/2001

PATENT APPLICATION: US/09/854,122

TIME: 15:09:02

Input Set : A:\Pha00701.app

Output Set: N:\CRF3\10012001\I854122.raw

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275 ctagaagctt acgaatgaat acgataataa ac 32
278 <210> SEQ ID NO: 12
279 <211> LENGTH: 8
280 <212> TYPE: PRT
281 <213> ORGANISM: Artificial Sequence
283 <220> FEATURE:
284 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
285 peptide ✓
287 <400> SEQUENCE: 12
288 Tyr Pro Lys Ser Gly Thr Thr Trp
289 1 5
292 <210> SEQ ID NO: 13
293 <211> LENGTH: 9
294 <212> TYPE: PRT
295 <213> ORGANISM: Artificial Sequence
297 <220> FEATURE:
298 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
299 peptide ✓
301 <220> FEATURE:
302 <221> NAME/KEY: MOD_RES
303 <222> LOCATION: (4)..(5)
304 <223> OTHER INFORMATION: Variable amino acid
306 <400> SEQUENCE: 13
W--> 307 Arg Lys Gly Xaa Xaa Gly Asp Trp Lys
308 1 5
311 <210> SEQ ID NO: 14
312 <211> LENGTH: 9
313 <212> TYPE: PRT
314 <213> ORGANISM: Artificial Sequence
316 <220> FEATURE:
317 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
318 peptide ✓
320 <220> FEATURE:
321 <221> NAME/KEY: MOD_RES
322 <222> LOCATION: (4)..(5)
323 <223> OTHER INFORMATION: Variable amino acid
325 <400> SEQUENCE: 14
W--> 326 Arg Lys Gly Xaa Xaa Gly Asp Trp Lys
327 1 5
330 <210> SEQ ID NO: 15
331 <211> LENGTH: 1192
332 <212> TYPE: DNA
333 <213> ORGANISM: Zostera marina
335 <220> FEATURE:
336 <221> NAME/KEY: CDS
337 <222> LOCATION: (1..33, 37..1041, 1045..1059, 1063..1077,
338 1081..1086, 1090..1119, 1123..1191)
340 <400> SEQUENCE: 15
341 acg cgg gga ata act gga atc gct gtt gct tgc tag cta cca ctg ata 48

```

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

## VERIFICATION SUMMARY

PATENT APPLICATION: US/09/854,122

DATE: 10/01/2001

TIME: 15:09:03

Input Set : A:\Pha00701.app

Output Set: N:\CRF3\10012001\I854122.raw

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:51 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:54 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:57 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:60 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:63 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:66 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:69 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:72 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:75 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:78 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:81 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:84 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:87 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:90 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:93 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1  
L:145 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4  
L:178 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5  
L:200 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6  
L:227 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7  
L:307 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13  
L:326 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14  
L:904 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23  
L:936 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24  
L:963 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25  
L:990 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26  
L:1027 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27  
L:1064 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28